

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A photolithographic reduction projection catadioptric objective with a beam path, comprising: a first optical group (G1) including an even number of at least six mirrors (M1-M6); and a second at least substantially dioptric optical group (G2) more imageward than said first optical group including a number of lenses (E4-E13), and wherein said first optical group (G1) provides compensative axial colour correction for said second optical group (G2), wherein a virtual image is formed by said first optical group physically behind a sixth mirror (M6).
2. (Original) The objective of Claim 1, wherein said image is formed with a numerical aperture of at least substantially 0.65.
3. (Canceled)
4. (Currently Amended) The objective of Claim 1, wherein said at least four mirrors (M1-M6) of said first optical group (G1) include a convex mirror (M6) arranged most imageward in the beam path of the objective, and wherein said second optical group (G2) receives a beam from said convex mirror (M6).
5. (Currently Amended) The objective of Claim 1, wherein optical surfaces of each minor ~~M1-M6~~ of said objective are at least sections of surfaces of revolution each having a common axis (A) of symmetry.

least substantially dioptric optical group (G2) more imageward than said first optical group (G1) receiving a beam from the convex most imageward mirror (M6) of the first optical group (G1), said second optical group (G2) including a number of lenses (E4-E13) providing image reduction, and wherein said first optical group (G1) provides compensative axial colour correction for said second optical group (G2), wherein an intermediate image is formed optically between a fourth mirror (M4) and a fifth mirror (M5).

12. (Currently Amended) The objective of Claim 9, wherein said second optical group (G2) is configured for independent compensative lateral color correction.
13. (Currently Amended) A photolithographic reduction projection catadioptric objective, comprising: a first optical group (G1) including an even number of at least six mirrors (M1-M6); and a second at least substantially dioptric optical group more imageward than said first optical group (G1) including a number of lenses (E4-E13) for providing image reduction, wherein a third mirror (M3) and a fourth mirror (M4) are disposed optically after a first mirror (M1) and a second mirror (M2) but are physically disposed between the first mirror (M1) and the second mirror (M2).
14. (Original) The objective of Claim 11, wherein said image is formed with a numerical aperture of at least substantially 0.65.
15. (Canceled)

16. (Currently Amended) The objective of Claim 11, wherein said at least six mirrors (~~M1-M6~~) of said first optical group (~~G1~~) include a convex most imageward mirror (~~M6~~), and wherein said second optical group (~~G2~~) receives a beam from said convex most imageward mirror (~~M6~~).
17. (Currently Amended) The objective of Claim 11, wherein optical surfaces of each mirror of said objective are at least sections of surfaces of revolution each having a common axis of symmetry (~~A~~).
18. (Currently Amended) The objective of Claim 11, wherein said second optical group (~~G2~~) is configured for independent compensative lateral colour correction.
19. (Currently Amended) The objective of Claim 11, further comprising an unobscured system aperture (~~AS~~).
20. (Currently Amended) The objective of Claim 17, wherein said unobscured aperture ~~AS~~ is located within said second optical group (~~G2~~).
21. (Original) The objective of Claim 11, further being devoid of any planar folding mirrors.
22. (Currently Amended) The objective of Claim 11, wherein an optical beam incident at said first optical group (~~G1~~) is divergent after a most imageward mirror (~~M6~~) of said first optical group (~~G1~~).
23. (Currently Amended) The objective of Claim 11, which is further an unobscured system comprising parallel axes (~~A~~) of

plurality of lenses is at least half of a diameter of said each lens (E4-E13).

27. (Original) The objective of Claim 11, wherein said objective is doubly telecentric.
28. (Currently Amended) The objective of Claim 11, wherein optical paths of projected rays are redirected at each lens element ~~(E4-E13)~~ of said second optical group at an angle of less than substantially 20°.
29. (Original) The objective of Claim 11, wherein said image is formed with a numerical aperture of at least substantially 0.70.
30. (Original) The objective of Claims 11, wherein said image is formed with a numerical aperture of at least substantially 0.75.